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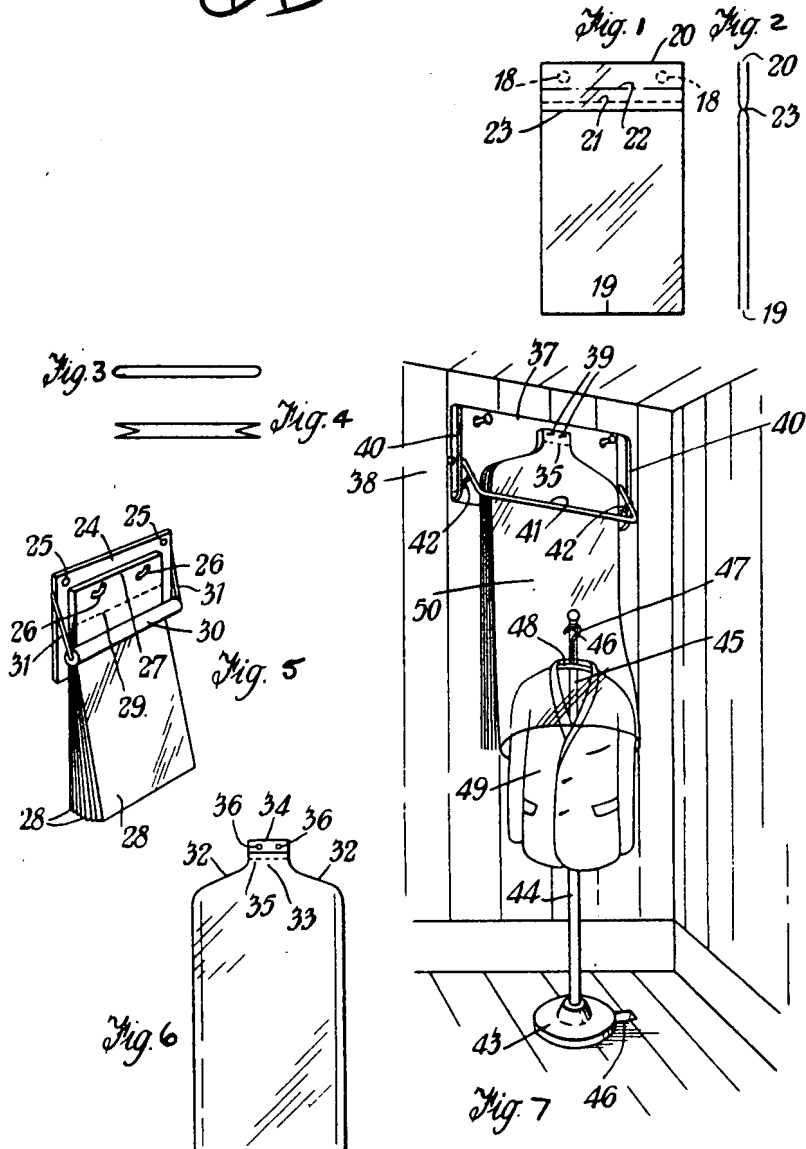
1 SHEET

AMENDED SPECIFICATION

This drawing is a reproduction of
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AMENDED SPECIFICATION

Reprinted as amended in accordance with the Decision of the Superintending Examiner acting for the Comptroller General dated the sixth day of September 1968, under Section 14, of the Patents Act, 1949.

PATENT SPECIFICATION

DRAWINGS ATTACHED

Inventor: JOHN DUNS

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COMPLETE SPECIFICATION

Improvements in and relating to Thermoplastic Bags

- We, SMITH & NEPHEW PLASTICS LIMITED, a British Company, of Neptune Street, Hull, Yorkshire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—
- This invention relates to pads of tear-off bags of thermoplastics film, such as polyethylene.
- The present invention comprises a pad of tear-off bags of thermoplastics film in which top edge portions of the bags are heat sealed or welded together and have two or more apertures through said edge portions for hanging the pad on a dispenser and the end of the bag opposite said top edge portion is open to provide the mouth of the bag and in which each of said bags has a line of weakening, such as a line of slits, between the body of the bag and said top edge portion thereof containing said apertures.
- In a preferred embodiment of pad, the bags are "wardrobe" bags each of which has shoulder portions along which the walls of the bag are joined together and a neck portion joined to said top edge portion having said apertures therein by said line of weakening and the lower end of each bag is open.
- The thermoplastics bags forming the pads may be of extruded flattened tubular form of any suitable thermoplastics material and thickness, for example 0.0005 inches, with or without gusseted side edges. At the top edge (which may extend the whole width of the bags or only a part or parts of such width) all of the similarly shaped and dimensioned bags which constitute the pad may be auto-
- geneously welded or heat-sealed together and through the complete thickness of the pad. Adjacent this sealed-together top edge, apertures are made through the pad by boring with heated pins with points, or by other means, whereby heat-sealed bores are located in the upper part of the pad, the inner surfaces of which are welded or heat-sealed (auto-geneously), the location of these apertures being in accordance with and corresponding to that of projections which are positioned towards the upper edge of a base plate of a dispenser; by this means a pad can be correctly positioned when mounted in the dispenser.
- Immediately beneath the welded-together top edge portion of the pad of the invention, the bodies of the bags are disposed. The exact arrangement depends upon the purpose of the bags in any particular case. Thus, in the case where the whole widths of the material at the top edge portions of the bags are welded together, each bag a small distance below the line of weakening through all the thicknesses of material, has all the said thicknesses of a bag welded or heat-sealed together. In this case the detached bag has a closed heat-sealed top and closed sides (gusseted or otherwise).
- In the case with which the invention is most particularly concerned, however, that is, with a pad of potential bags for functioning as wardrobe bags, the bags proper have close side edges (gusseted or otherwise). At the top, however, they have a particular formation.
- This comprises an upper edge, in the central position, but only for a portion, say, one-

sixth, of the width. This forms a neck, of double thickness material, which can be, for example, two or three inches high, and from the lower extremities of the sides thereof the upper edge of the bag proper inclines downwardly in two opposite directions, to the upper corners of the side edges of the bag to form shoulder portions. The thicknesses of the material forming these shoulder portions and the sides of the narrow neck portions are heat-sealed together. In addition, the neck portion is joined to the welded together portion by the line of weakening which may be a row of cut slits through the two thicknesses of the neck.

In order that the invention may be better understood, it will now be described with reference to the accompanying drawings which are somewhat diagrammatic and given by way of example only, and in which:—

Fig. 1 shows an elevation of one form of bag which may be used for forming pads in accordance with the invention,

Fig. 2 is a vertical cross section of the bag shown in Fig. 1,

Figs. 3, and 4 show transverse cross-sections of bags either of which can be a transverse section of the bag shown in Figs. 1 and 2,

Fig. 5 shows a perspective diagram of one form of dispenser with a pad of bags made according to the invention to be dispensed,

Fig. 6 shows an elevation of a pad of bags, termed "wardrobe" bags, made according to an embodiment of the invention, and

Fig. 7 is a perspective view of such a pad of wardrobe bags, as used on a dispenser.

The bag shown in Figs. 1 and 2 has two walls open at the bottom 19 and also open at the top 20. They have a line of weakness formed by a row of spaced cut slits through both walls at 21 and a plurality of the bags are heat-sealed together from the top down to the position shown by the dot-and-dash line 22. However, below the lines of cut slits 21, the two walls of each bag are heat-sealed together throughout the whole of their width as indicated by 23. Pads of bags in accordance with Figs. 1 and 2, when heat-sealed together at the top, also have two symmetrically arranged spaced-apart apertures 18 therethrough produced by heated pins or otherwise.

The cross-section of the bag shown in Fig. 1 can be with both sides closed as shown in Fig. 3 or with closed gusseted sides as shown in Fig. 4.

When the outermost bag is pulled, then the two walls of material tear at the line of the cut slits 21, leaving a bag which is closed at the top, open at the bottom and with the sides depending upon the cross-section (Fig. 3 or Fig. 4).

Fig. 5 shows a simple form of dispenser which comprises a back plate or board 24

adapted to be attached by nails or the like to a wall or the like through apertures 25 towards its upper corners.

In symmetrically arranged positions on the front, this has projecting hooks 26 to have passed thereon the apertures 18 of the pads.

Such a pad is shown in position, comprising an apertured welded-together top 27, with various depending bags 28; the line of cut slits 29 of the front surface of the front bag appears in the drawing.

On the surface of the front bag 28, below the cut line 29, there presses a weighted roller 30 carried by arms 31 pivoted to the sides of the plate or board 24. The roller 30 holds the bags depressed by its weight, after the removal of the uppermost bag. In some cases spring means may supplement or replace the gravity bias of the roller.

Each of the wardrobe bags of the pad thereof, shown in Fig. 6, has an open bottom, closed sides (preferably gusseted, as indicated in the Figure) and a top which is partly closed and partly open. The closed parts are from the sides of the bag up the sloping shoulder portions 32 and up the sides of the neck portion 33 to the top 34. In the loose assembly of wardrobe bags before welding together, this top is open. When welded to form the pad, the central neck portions have lines of cut slits 35 across them and when a bag is pulled off the pad the top side of the bag at the narrow central neck portion is open. The welded upper part of the pad has the spaced suspending apertures 36, as shown, these apertures being necessarily close to the centre of the top edge of the pad.

Fig. 7 shows how a pad of wardrobe bags according to the invention is utilised. In the Figure, 37 is a board or plate suspended on a wall 38 and which has projecting pins 39 over which the apertures 36 of the pad pass, to suspend such pad. The board or plate 37 has side flanges 40, in which are mounted to turn the pivotal ends of a crank-like frame 41 formed from a bent rod, the cross bar of which bears on the front bag across its full width and is kept pressed thereon by side springs 42 anchored to the base plate and pulling the crank arms downwardly. The arrangement is such that when the crank frame is turned upwardly, it remains in that position until lowered. This facilitates placing fresh pads or bags on the pins 39.

As indicated in Fig. 7, the dispenser, which is mounted in a somewhat high position of the wall 38, has associated therewith a telescoping standard of known construction, comprising a heavy base 43 with an uprising hollow tube 44 into which telescopes an upper rod or tube 45 of smaller diameter. The known construction (not seen in the drawing) includes catch means to hold the rod 45 in an upper position until a pedal 46 is depressed, when the inner rod 45 drops down to a lower position,

again to be raised by hand to the upper position when required.

5 The inner rod 45, towards its upper end, has a catch 46 for suspending a hook 47 of a coat hanger 48 which receives the garment to be bagged which, in the drawing, is a coat 49.

10 As shown, the outermost bag 50 has its open bottom spread out and passed down over the upper end of the coat 49 on the hanger 48, and over the hook 47 and upper end of the rod 45.

15 By pulling down on this outer bag 50, the cut slits 35 at the neck are severed so that the bag can be moved completely down to cover the garment and perhaps extend below the garment for a desired distance. The pressure of the bar of the frame 41 on the outer bag 50 is insufficient to prevent this bag from being so pulled down.

20 Also, it should be appreciated that when fully pulled down, the open-topped neck passes over the upper end of the rod 45, the hook 47 and the catch 46. It is simply necessary then to lift the hook 47 from the catch 46, to remove the garment 49 covered by the bag 50 and mounted on the hanger 48. The hook 47, with the various parts carried thereby, can then be suspended on any suitable rail or otherwise.

30 The bags can have a length corresponding to or slightly greater than the average length of the garments which they are intended to cover. For greater utility, however, there could be bags and pads according to the present invention, but for garments of different average lengths, such as the jackets of lounge suits, or raincoats, utilised upon one dispenser, the pad of longer-length bags being 35 located below the pad of the shorter bags. Similarly, pads of more than two lengths of bag may be used on one dispenser, the longest being the lowermost.

45 Although the tops of the bags to form the pad may be heat-sealed together for some distance down and in this solid part the suspending apertures be formed, in some cases only the upper edges of the bags need be sealed together down to a required depth, 50 and the actual suspension holes in the bags come below the sealed-together part, the apertures in all of the bags obviously being in alignment.

55 Where required, the portion of the dispenser in engagement with the pad or pads may be covered in by readily attachable and detachable "pelmet-like" means. If required, this could engage the outer ends of the pins, tongues or the like which carry the pads, 60 and serves to form an additional security means for holding the pads in position.

Dispensers for pads of plastic bags as particularly described, or generally, can be used on horizontal surfaces or surfaces inclined at less than a right angle to the horizontal. Care must be taken in this case that the dispenser is adequately secured in position and the bags of a pad can be correctly positioned. For instance, in some cases additional side guides can be employed for engaging the side edges of the bags in the pad. The pressing roller in these instances can be carried by side levers so positioned that the weight of the roller remains effective during the action of the apparatus. A suitably disposed spring means, however, where necessary can supplement the weight. 65 70 75

The invention is not limited to the precise forms or details of construction herein described, as these may be varied to suit particular requirements. 80

WHAT WE CLAIM IS:—

1. A pad of tear-off bags of thermoplastics film in which top edge portions of the bags are heat sealed or welded together and have two or more apertures through said edge portions for hanging the pad on a dispenser and the end of each bag opposite said top edge portion is open to provide the mouth of the bag and in which each of said bags has a line of weakening, such as a line of slits, between the body of the bag and said top edge portion thereof containing said apertures. 85 90

2. A pad as claimed in claim 1 in which said top edge portions of the bags are welded together along their top edges. 95

3. A pad as claimed in claim 1 or 2 in which said top edge portions of the bags are welded together at said apertures therein. 100

4. A pad as claimed in claim 1, 2 or 3 in which the bags are gusseted along opposite side edges.

5. A pad as claimed in any of claims 1 to 4 in which the opposite walls of each bag are joined together adjacent said line of weakening at the opposite side thereof to said upper edge portion. 105

6. A pad as claimed in any of claims 1 to 4 in which the bags are "wardrobe" bags each of which has shoulder portions along which the walls of the bag are joined together and a neck portion joined to said top edge portion having said apertures therein by said line of weakening. 110 115

7. A pad as claimed in claim 6 in which said sealed or welded together top edge portions of the bags are no wider than said neck portions and have two apertures therein for hanging the pad. 120

8. A pad made up of bags of the kind illustrated in Figs. 1 and 2 of the accompany-

ing drawings substantially as herein described.

9. A pad of wardrobe bags substantially as herein described with reference to and as illustrated in Figs. 6 and 7 of the accompanying

5 drawings.

W. P. THOMPSON & CO.,
12, Church Street, Liverpool, 1.
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